

Title (en)
HYDRAULIC HAMMERING DEVICE

Title (de)
HYDRAULISCHE HAMMERVORRICHTUNG

Title (fr)
DISPOSITIF DE MARTELAGE HYDRAULIQUE

Publication
EP 3323564 A4 20190313 (EN)

Application
EP 16824380 A 20160707

Priority
• JP 2015139868 A 20150713
• JP 2016070155 W 20160707

Abstract (en)
[origin: EP3323564A1] To improve hammering power by shortening a piston stroke, while keeping its hammering energy. The hydraulic hammering device including: a cylinder (100); a piston (200) slidably fitted in the cylinder (100); a piston front chamber (110) and a piston rear chamber (111) which are defined between an outer circumferential surface of the piston (200) and an inner circumferential surface of the cylinder (100) and disposed separately from each other at front and rear, respectively, in an axial direction; a switching-valve mechanism (130) driving the piston by switching at least one of the piston front chamber (110) and the piston rear chamber (111) into communication with at least one of a high pressure circuit (101) and a low pressure circuit (102); and an acceleration piston (410) as an urging means, which is disposed behind the piston (200) and comes in contact with the piston (200) during a retreat stroke of the piston (200), to urge the piston (200) forward in cooperation with braking force by pressurized oil acting on the piston (200).

IPC 8 full level
B25D 9/26 (2006.01); **E21B 1/26** (2006.01)

CPC (source: EP KR US)
B25D 9/145 (2013.01 - EP US); **B25D 9/16** (2013.01 - EP US); **B25D 9/26** (2013.01 - EP KR US); **B25D 2209/00** (2013.01 - KR US); **B25D 2209/002** (2013.01 - US); **B25D 2250/021** (2013.01 - KR)

Citation (search report)
• [X] DE 4424080 C1 19960118 - KLEMM BOHRTECH [DE]
• [X] JP H0493185 A 19920325 - TEISAKU KK
• [X] US 4111269 A 19780905 - OTTESTAD JACK B
• See references of WO 2017010400A1

Cited by
US10730075B2

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
EP 3323564 A1 20180523; **EP 3323564 A4 20190313**; **EP 3323564 B1 20220323**; CN 107848097 A 20180327; CN 107848097 B 20210427; JP 6463476 B2 20190206; JP WO2017010400 A1 20171228; KR 102033235 B1 20191016; KR 20180014779 A 20180209; US 11052524 B2 20210706; US 2018207782 A1 20180726; WO 2017010400 A1 20170119

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EP 16824380 A 20160707; CN 201680041761 A 20160707; JP 2016070155 W 20160707; JP 2017528645 A 20160707; KR 20177037782 A 20160707; US 201615742832 A 20160707